

CLAIMS

What is claimed is:

1. A method for transmitting wireless communication signals, comprising:
 - 5 forming MAC layer signals according to a DOCSIS protocol;
 - adding, at the MAC layer, an ARQ header to each of the MAC layer signals;
 - transmitting the MAC layer signals; and
 - storing the MAC layer signals.
- 10 2. The method of claim 1 wherein the step of adding an ARQ header includes adding a sequence number in the ARQ header.
- 15 3. The method of claim 2 further including storing transmitted frames until a negative acknowledge signal is received.
4. The method of claim 2 further including receiving a non-acknowledge signal from a receiver, the non-acknowledge signal including a previously transmitted sequence number.
- 20 5. The method of claim 4 further including deleting a group of stored MAC layer signals, the group of stored MAC layer signals being a function of a value of the previously transmitted sequence number.
6. The method of claim 5 wherein the group comprises all MAC layer signals transmitted prior to the MAC layer signal containing the previously transmitted sequence number.
- 25 7. The method of claim 4 further including deleting a group of stored MAC layer signals after a specified period has elapsed since receiving the acknowledge signal.
8. The method of claim 4 further including retrieving a stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

9. The method of claim 8 further including transmitting the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

5 10. The method of claim 9 further comprising deleting (flushing) all stored MAC layer signals that were transmitted prior to the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

10 11. The method of claim 4 further including determining whether the previously transmitted sequence number identified in the acknowledge signal is corresponds to a sequence number for a stored MAC layer signal.

15 12. The method of claim 11 further including deleting all stored MAC layer signals if the sequence number identified in the acknowledge signal does not correspond to a sequence number for a stored MAC layer signal.

13. A wireless transceiver for transmitting and receiving wireless communication signals, comprising:

a receiver portion that receives acknowledge signals transmitted by another device over a wireless medium; and

5 a transmitter portion, wherein the transmitter portion:

forms MAC layer signals according to a DOCSIS protocol;

adds, at the MAC layer, an ARQ header containing a sequence number to each of the MAC layer signals;

transmits the MAC layer signals;

10 stores the MAC layer signals; and

deletes at least one stored MAC layer signal.

14. The wireless transceiver of claim 13 wherein the wireless transceiver stores transmitted frames until a negative acknowledge signal is received.

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15. The wireless transceiver of claim 13 wherein the wireless transceiver receives and responds to an acknowledge signal from a receiver, the acknowledge signal including a previously transmitted sequence number.

20 16. The wireless transceiver of claim 15 wherein the wireless transceiver deletes a group of stored MAC layer signals, the group of stored MAC layer signals being a function of a value of the previously transmitted sequence number.

25 17. The wireless transceiver of claim 16 wherein the group comprises all MAC layer signals transmitted prior to the MAC layer signal containing the previously transmitted sequence number.

30 18. The wireless transceiver of claim 16 wherein the wireless transceiver deletes a group of stored MAC layer signals after a specified period has elapsed since receiving the acknowledge signal.

19. The wireless transceiver of claim 16 wherein the wireless transceiver retrieves a stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

5 20. The wireless transceiver of claim 19 wherein the wireless transceiver transmits the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

10 21. The wireless transceiver of claim 20 wherein the wireless transceiver deletes (flushes) all stored MAC layer signals that were transmitted prior to the stored MAC layer signal that corresponds with the previously transmitted sequence number received in the acknowledge signal.

15 22. The wireless transceiver of claim 16 wherein the wireless transceiver determines whether the previously transmitted sequence number identified in the acknowledge signal is corresponds to a sequence number for a stored MAC layer signal.

20 23. The wireless transceiver of claim 22 wherein the wireless transceiver deletes all stored MAC layer signals if the sequence number identified in the acknowledge signal does not correspond to a sequence number for a stored MAC layer signal.

24. A fixed wireless device, comprising:
means for communicating over a wireless physical layer;
means for communicating over a DOCSIS MAC layer; and
means for embedding an ARQ protocol in said DOCSIS MAC layer.

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25. The fixed wireless device of claim 24 wherein the means for communicating includes a receiver portion that receives non-acknowledge signals transmitted by another device over a wireless medium and a transmitter portion, wherein the transmitter portion:

forms MAC layer signals according to a DOCSIS protocol;
10 adds, at the MAC layer, an ARQ header containing a sequence number to each of the MAC layer signals;
transmits the MAC layer signals;
stores the MAC layer signals; and
deletes at least one stored MAC layer signal.

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26. The fixed wireless device of claim 25 wherein the fixed wireless device stores transmitted frames until either a non-acknowledge signal is received or a timer expires.